

WHAT IS CLAIMED IS:

1. A speed control circuit for a brushless dc motor, comprising:
 - a fan motor drive circuit connected with a power source;
 - an over-current-detecting/current-limiting circuit connected to the motor

5 drive circuit and adapted to detect a rotational speed and an over-current, when the rotational speed is abnormal and the over-current is occurred, the over-current-detecting/current-limiting circuit controls a current at a low voltage level for passing through the fan motor drive circuit; and

10 a multi-functional speed control circuit connected to the over-current-detecting/current-limiting circuit and adapted to send a predetermined speed signal to control it;

wherein the multi-functional speed control circuit is able to generate PWM signals for precisely controlling the rotational speed.
2. The speed control circuit for the brushless dc motor as defined in
15 Claim 1, wherein the over-current-detecting/current-limiting circuit includes an over-current-detecting circuit, a rotational detective circuit and a current-limiting circuit.
3. The speed control circuit for the brushless dc motor as defined in
Claim 1, wherein the multi-functional speed control circuit includes a PWM
20 control circuit and a thermal sensor element.

4. The speed control circuit for the brushless dc motor as defined in
Claim 3, wherein the PWM control circuit is consisted of a PWM generator
and a multi-functional control circuit.

5. The speed control circuit for the brushless dc motor as defined in
Claim 4, wherein the multi-functional speed control circuit is connected to
the thermal sensor element and further connected to a rotational detective
circuit of the over-current-detecting/current-limiting circuit.

6. The speed control circuit for the brushless dc motor as defined in
Claim 3, wherein the thermal sensor element is a thermistor.

10 7. The speed control circuit for the brushless dc motor as defined in
Claim 1, wherein the multi-functional speed control circuit is connected
between an over-current-detecting circuit and a rotational detective circuit of
the over-current-detecting/current-limiting circuit.

8. The speed control circuit for the brushless dc motor as defined in
15 Claim 1, wherein the fan motor drive circuit includes a Hall voltage
amplifier circuit, a phase inverter circuit, and a motor coil drive circuit.